



THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re Patent Application of   | ) | <b>MAIL STOP AF</b>     |
| Nobuyuki <i>Takahashi</i>     | ) | Group Art Unit: 3652    |
| Application No.: 10/015,601   | ) | Examiner: CHARLES A FOX |
| Filed: December 17, 2001      | ) | Confirmation No.: 4754  |
| For: INTERBACK-TYPE SUBSTRATE | ) |                         |
| PROCESSING DEVICE             | ) |                         |
|                               | ) |                         |
|                               | ) |                         |
|                               | ) |                         |

**REQUEST FOR PRE-APPEAL BRIEF CONFERENCE**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated January 13, 2006, Applicant hereby requests a pre-appeal brief conference in accordance with the July 12, 2005 Official Gazette notice, and which was extended on January 10, 2006.

Claim 1 defines a substrate processing device in which a substrate is carried into the device from one side of the device and is inverted in the device to be carried out and returned to the same side, the device comprises, among other elements, a plurality of vacuum processing chambers longitudinally provided and hermetically connected to each other, an outward carry line that extends from a first position at a first side of the device to an inversion position within the device, a return carry line from the inversion position to a second position at the first side of the device, and a second return carry line from the inversion position to the first side of the device, wherein each of the carry lines has a different path and each of the return carry lines passes through a plurality of the vacuum processing chambers. In one exemplary (nonlimiting) embodiment, the outward carry line is labeled with reference numeral

94 in Figure 1, and the return carry lines are labeled with reference numerals 95L and 95R. By utilizing one outward carry line and two return lines, the outward carry line can move twice as fast as the return lines, thus speeding up throughput through the machine.

Claims 1-3 and 6-10 have been rejected under 35 USC 103(a) as being unpatentable over *Aruga* (USP 6,027,618) in view of *Miller* (USP 5,417,537). The Examiner admits that *Aruga* does not teach more than one outward or return carry line. As recognized by the Examiner, *Aruga* teaches a *single* track extending through a plurality of process chambers 2. For this deficiency, the examiner relies on *Miller*, alleging that *Miller* teaches a vacuum apparatus for transferring substrates, and that *Miller* discloses a plurality of carry lines 36 for moving substrates about the chambers. The Examiner concludes that it would have been obvious to provide the system of *Aruga* with multiple conveying paths as taught by *Miller* in order to maximize the output of the process facility.

However, *Miller* operates quite differently than either the present invention or *Aruga*. Specifically, *Miller* discloses a linear array of transport modules 12. See Figure 1 and column 3, line 64. The transport modules merely contain tracks 36, transporters 26, docking ports 34, and staging areas. *No vacuum processing occurs in the transport modules 12*. The vacuum processing occurs in the process modules 40, 44, and 46, and the tracks 36 do not extend through the process modules (col. 4, line 16 and lines 63 – 67). Instead, transfer robots 14 transfer the wafers between the transport modules 12 and the process modules 40, 44, 46. Col. 4, lines 61 – 63. Furthermore, the process modules 40, 44, 46 of *Miller* are not “longitudinally provided”, they are instead arranged in clusters.

In contrast to the prior art, claims 1 – 3 and 6 – 10 each define a combination that includes a plurality of longitudinally provided process chambers having first *and* second return carry lines, wherein each of the carry lines has a different path and *each* of the carry lines passes *through* the plurality of vacuum processing chambers.

As set forth in paragraph 102 of the publication of the present application (US 2002-0080291), by the adoption of the return carry line as a path that is different than the outward carry line, processing can be performed on the substrate irrespective of whether the processing is the same or different on the return carry line, and the number of processing steps can be increased. In addition, *and because the return carry line thereof is divided into two branches*, processing can be performed when the substrates 9 are passed through the two return carry lines 95L, 95R and returned, and productivity can be significantly increased. However, the present invention is not limited to the disclosed preferred embodiments.

Neither *Aruga* nor *Miller*, teaches longitudinally provided process chambers having first *and* second return carry lines, wherein each of the carry lines has a different path, and *each* of the carry lines passes *through* the plurality of vacuum processing chambers.

Accordingly, claims 1 – 3 and 6 – 10 are patentable over the combination of *Aruga* and *Miller*.

Claims 11-15 have been rejected under 35 USC 103(a) as being unpatentable over *Takahashi* (USP 4,643,629) in view of *Miller*. The Examiner admits that *Takahashi* does not teach a system having a branch line with a plurality of outward or return carry lines. For this deficiency, the examiner relies on *Miller*, alleging that

*Miller* discloses a plurality of carry lines 36 for moving substrates about the chambers.

However, claims 11 - 15 define two return carry lines wherein each of the carry lines has a different path and each of the return carry lines passes through a plurality of the vacuum processing chambers. Since neither *Takahashi* nor *Miller*, teaches longitudinally provided process chambers having first *and* second return carry lines, wherein each of the carry lines has a different path, and *each* of the carry lines passes *through* the plurality of vacuum processing chambers. Accordingly, claims 11 - 15 are patentable over *Takahashi* and *Miller*. See the comments above concerning claims 1 - 3 and 6 - 10.

Claims 4 and 5 have been rejected under 35 USC 103(a) as being unpatentable over *Aruga* in view of *Miller*. However, claims 4 and 5 depend from claim 1, and are thus patentable over the cited art at least for the reasons set forth above.

Accordingly, all of the claims are patentable over the applied prior art.

Respectfully submitted,

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